BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AFMC INSTRUCTION 21-132

5 JANUARY 2000

Maintenance

DEPOT MAINTENANCE TECHNICAL COMPLIANCE REVIEW PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction describes an internal review system for selected areas of depot maintenance industrial operations. It applies to all ALC depot maintenance production organizations. The Aerospace Maintenance and Regeneration Center (AMARC) will comply with this instruction when like industrial operations are performed. It implements the applicable portions of AFPD 21-1, *Managing Aerospace Equipment Maintenance*, and AFI 21-102, *Depot Maintenance Management*. It provides depot maintenance technical compliance oversight for: AFMCI 21-107, *Tool Control and Accountability*, AFMCI 21-108, *Maintenance Training and Production Acceptance Certification (PAC) Program*, AFMCI 21-110, *Equipmentt Maintenance Technical Data and Work Control Documents*, AFMCI 21-115, *Depot Maintenance Quality Assurance (QA)*, AFMCI 21-122, *Foreign Object Damage (FOD) Prevention*, AFMCI 21-127, *Depot Maintenance Plant Management*, and AFMCI 21-130, *Equipment Maintenance Material Control*. This instruction supersedes AFMCI 21-132, *Industrial Operations Internal Review Procedures*, dated 15 April 1999.

SUMMARY OF REVISION

This instruction updates the previous edition of AFMCI 21-132 to incorporate revisions to maintenance instructions. Metrics have been added to provide continuous evaluation of the maintenance program (attachment 1). The metrics are for center use and must be analyzed during the review with the results reported yearly to HQ AFMC. All checklists must now be accomplished annually.

Section A—General

1. Introduction. This instruction provides the means to review and evaluate compliance with technical data, maintenance training and PAC, QA and other guidance that impacts on product and process conformance throughout AFMC depot maintenance operations. The four areas evaluated are (1) technical data and Work Control Documents (WCD), (2) personnel qualification and certification, (3) tools and equipment, and (4) process discipline.

2. Responsibilities.

2.1. HQ AFMC/LG. HQ AFMC/LG (LGP) is the OPR for this instruction and the internal review program.

2.1.1. Prepares Unit Compliance Inspection (UCI) and self inspection checklists.

2.1.2. Reviews results of center annual AFMC MSEPs and center reviews for needed policy actions.

2.2. HQ AFMC/IG. HQ AFMC IG is the OPR for the AFMC MSEP program.

2.2.1. Prepares MSEP Checklists.

2.2.2. Conducts annual MSEP inspections of ALCs and AMARC using applicable UCI and MSEP checklists.

2.3. Center/CC. The Center/CC ensures compliance with this instruction.

2.3.1. Reviews all MSEP and internal review results.

2.3.2. Periodically reviews technical compliance.

2.4. Center Quality Assurance (QA) Focal Point.

2.4.1. Is the center manager for the technical compliance review program.

2.4.2. Prepares a local implementing instruction.

2.4.3. Assigns MSEP, UCI and self inspection checklist OPRs as necessary.

2.4.4. Consolidates and reviews applicable metrics.

2.4.5. Plans and executes the annual review for assigned checklist(s).

3. Checklists. All applicable depot maintenance UCI, MSEP and self inspection checklists will be used as a minimum for the annual reviews. The checklists can be found on the HQ AFMC Inspector General (IG) Homepage under the MSEP and UCI Checklist directories. Additional items and/or checklists can be added at local discretion. The following UCI and self inspection checklists must be used in addition to the MSEP checklists:

- Foreign Object Damage (FOD) Prevention (AFMCI 21-122)
- Maintenance Training and Production Acceptance Certification (PAC) Program (AFMCI 21-108)
- Depot Maintenance Quality Assurance (QA) (AFMCI 21-115)
- Depot Maintenance Technical Data and Work Control Documents (AFMCI 21-110)
- Tool Control and Accountability (AFMCI 21-107)
- *Plant/Shop Management (AFMCI 21-127)
- *Equipment Maintenance Material Control (AFMCI 21-130)

***Note:** These are self inspection checklists since they do not contain critical compliance items. There are other checklists that impact technical compliance (such as safety, training, etc.) that must be considered when performing technical compliance reviews.

Section B—Conducting Reviews

4. Annual Reviews. Center level technical compliance reviews will be conducted annually. These reviews are planned, coordinated, and executed by the Center QA Focal Point. Review teams will be composed of quality assurance evaluator and augmentees as needed. Personnel will not be assigned to the team assessing their own organization unless accompanied by other team members.

5. Continuous Reviews. The ALC QA Manual will list the types of quality assessments to be performed and the frequency of the reports required to be provided to the Center QA Focal Point for review. Reference AFMCI 21-115.

Section C—Data

6. Metrics. Data collection and analysis is required to establish the efficiency and effectiveness of the maintenance processes reviewed. This data will provide regular feedback to management on the health of the process and provide the review teams a means to evaluate performance. Mandatory metrics, criteria, level/frequency of reporting and other pertinent information is in attachment 1 of this instruction.

7. Data Analysis. The internal review members assisted as necessary by technical experts to perform analysis. Care should be taken to try to determine root causes of deficiencies rather than simply treating symptoms. Once individual questions are analyzed, attention must be directed to determine systemic weaknesses and needed corrective actions.

8. Reporting. The annual review will be accomplished during the first quarter of each fiscal year (FY). Results will be forwarded to HQ AFMC/LG by 31 January of each year (RCS: MTC-LG(AR)9302 applies).

- Executive summary to include an assessment of the four technical compliance areas as listed in paragraph 1.1.
- Recommendations for policy changes/addition.
- Metric data required by attachment 1 for the fiscal year by period collected (i.e. monthly, quarterly).
- Results of review of Special Skills Qualification (SSQ), Recurring Training Requirement (RTR), and formal training as required by AFMCI 21-108.
- Results of the annual Maintenance Training and Production Acceptance Certification (PAC) annual assessment as required by AFMCI 21-108.
- A copy of the most current ALC QA manual as required by AFMCI 21-115.

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Attachment 1

DEPOT MAINTENANCE TECHNICAL COMPLIANCE REVIEW METRICS

A1.1. The metrics required by the review system provide a management process control system that ensure the operation of technically compliant maintenance processes. The metrics are categorized in the four categories shown below. The required periodic reporting to the levels specified by each metric will provide management the visibility to identify and correct problems in these four areas. The collection analysis and reporting of these metrics is mandatory. Some of these metrics may depend on the results of evaluations and inspections performed by quality assurance as outlined in AFMCI 21-115. Cumulative totals are based on the FY reporting period and are cumulative for the 12 month FY period. When data is based on core inspection results the entire core inspection checklist contained in the quality assurance plan for that workload must be used to provide consistency.

A1.1.1. Technical Data. The metrics in this category will tell management if the technical data in use is current and accurate. Related checklists - AFMCI 21-110, *Depot Maintenance Technical Data and Work Control Documents (WCD)* and applicable MSEP checklists.

A1.1.1.1. Technical Order Currency:

A1.1.1.1.1. Purpose: Determine the currency of technical orders in use in depot maintenance production.

A1.1.1.1.2. Formula: {(cumulative number of core inspections of technical data found to have no defects) divided by (cumulative number of core inspections performed)} times 100 equals the percentage of current technical data in use.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.1.2. Work Control Document (WCD) Currency:

A1.1.1.2.1. Purpose: Determine the currency of WCDs in use in depot maintenance production.

A1.1.1.2.2. Formula: {(cumulative number of core inspections of WCDs found to have no defects) divided by (cumulative number of core inspections performed)} times 100 equals the percentage of current technical data in use.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.1.3. Engineering Requests (Response Time):

A1.1.1.3.1. Purpose: Measure response time for AFMC Form 202s to determine timeliness of engineering disposition.

A1.1.1.3.2. Formula: {(cumulative number of workdays to respond to engineering requests) divided by (cumulative number of changes requested)} to determine an average response time.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.2. Tools and Equipment. The metrics in this category will tell management if the tools and equipment are the right ones and in serviceable condition. Related Checklists:

- Tool Control and Accountability (AFMCI 21-107).
- Foreign Object Damage (FOD) Prevention (AFMCI 21-122).
- Plant/Shop Management (AFMCI 21-127).
- Equipment Maintenance Material Control (AFMCI 21-130).
- Applicable MSEP checklists.

A1.1.2.1. Lost Tool Performance:

A1.1.2.1.1. Purpose: Determine tool control effectiveness by tracking the number of lost tools that are not recovered.

A1.1.2.2. Chart: Number of reported lost tools that are found and not found for the reporting period.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.2.3. .Individual Took Kit Performance:

A1.1.2.3.1. Purpose: Determine the effectiveness of the individual toolbox control process by tracking inspection results.

A1.1.2.3.2. Formula: {(cumulative number of individual tool kits inspected and found to have no defects) divided by (cumulative number of individual tool kits inspected)} times 100 equals the percent of defect free individual tool kits.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.2.4. Consolidated Tool Kit Performance:

A1.1.2.4.1. Purpose: Determine the effectiveness of the consolidated tool kit control process by tracking inspection results.

A1.1.2.4.2. Formula: {(cumulative number of consolidated took kits inspected and found to have no defects)} divided by {(cumulative number of individual tool kits inspected)} times 100 equals the percent of defect free consolidated tool kits.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.2.5. Industrial Plant Equipment Performance:

A1.1.2.5.1. Purpose: Determine the serviceability of industrial plant equipment by tracking inspection results.

A1.1.2.5.2. Formula: {(cumulative number of operational industrial plant equipment inspections of organically performed periodic maintenance actions found to have no defects) divided by (cumulative number of industrial plant equipment items inspected)} times 100 equals the percent of defect free industrial plant equipment.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.3. Training and Qualification. The metrics in this category will tell management if the maintenance workforce has the technical expertise and is capable of proficient task accomplishment. Related Checklists - Maintenance Training and Production Acceptance Certification (AFMCI 21-108) and applicable MSEP checklists.

A1.1.3.1. PAC Documentation Review:

A1.1.3.1.1. Purpose: Determine the PAC qualification currency by tracking inspection results.

A1.1.3.1.2. Formula: {(cumulative number of PAC folders inspected and found to have no defects) divided by (cumulative number of PAC folders inspected)} times 100 equals the percent of defect free PAC folders.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.3.2. PAC Decertification Trend:

A1.1.3.2.1. Purpose: Assess worker qualification by tracking all decertification actions

A1.1.3.2.2. Chart: (1) number of workmanship decertifications during the reporting period (2) number of administrative decertifications during the reporting period.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.3.3. Formal Training Development:

A1.1.3.3.1. Purpose: Determine the formal training program effectiveness by tracking training development requests, and training development completion.

A1.1.3.3.2. Chart: (1) cumulative number of formal training development requested (2) cumulative number of formal training development completion.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division - Quarterly

A1.1.3.4. Training Status:

A1.1.3.4.1. Purpose: Determine the formal training program effectiveness by tracking training/SSQ requirements/requests, and training/SSQ allocations/status, and actual training/SSQ completions.

A1.1.3.4.2. Chart: (1) cumulative number of training requests (2) cumulative number of training allocations (3) cumulative number of training completed.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.3.5. Training Course Material Currency:

A1.1.3.5.1. Purpose: Determine the currency of training course materials by tracking the status of the biennial (every two years) training course material validation.

A1.1.3.5.2. Formula: {(cumulative number of training courses validated for currency of course material) divided by (number of training courses requiring biennial validated)} times 100 equals percent of training courses validated for currency.

Reporting period*:*

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.4. Process Discipline. The metrics in this category will tell management if the maintenance workforce is safely and efficiently executing tasks in accordance with technical data and other directives. Related Checklist - AFMCI 21-115, Depot Maintenance Quality Assurance (QA) and applicable MSEP checklists.

A1.1.4.1. Task Evaluations Performance:

A1.1.4.1.1. Purpose: Determine the technical compliance level of all tasks accomplished by tracking inspection results.

A1.1.4.1.2. Formula: {(cumulative number of task evaluations passed) divided by (cumulative number of task evaluations conducted)} times 100 equals percent of acceptable task evaluations.

Reporting period:

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.4.2. Quality Verification Inspection (QVI) Performance:

A1.1.4.2.1. Purpose: Determine the technical compliance level of all QVIs accomplished by tracking inspection results.

A1.1.4.2.2. Formula: {(cumulative number of QVIs conducted and rated QAR-1, QAR-2, and QAR-3).

Reporting period*:*

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.4.3. Engine Test Cell Performance:

A1.1.4.3.1. Purpose: Determine the technical compliance level of engines being sent to test cell by tracking the engine rejects.

A1.1.4.3.2. Formula: {(number of engines rejected for workmanship during test cell runs for the reporting period)} divided by {(number of engines undergoing acceptance test cell runs for the reporting period)} times 100 equal the percent of rejected engine test cell runs.

Reporting period*:*

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly

A1.1.4.4. Aircraft Functional Check Flight (FCF) Performance:

A1.1.4.4.1. Purpose: Determine the technical compliance level of aircraft undergoing FCF by tracking the number of required FCF flights.

A1.1.4.4.2. Formula: (cumulative number of aircraft FCF flights) divided by (cumulative number of aircraft conducting FCF flights) equals the average number of FCF per aircraft.

Reporting period*:*

AFMC - Annually

ALC - Quarterly

Product Directorate/Division – Quarterly/Monthly